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09/548,031	04/12/2000	David Wiener	WIE-003	5389

7590  
David P Gordon Esq  
65 Woods End Road  
Stamford, CT 06905

11/05/2003

EXAMINER

DABNEY, PHYLESHA LARVINIA

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 11/05/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/548,031

Applicant(s)

WIENER, DAVID

Examiner

Phylesha L Dabney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 21-25, 32, 35, 39, 40, 46-51 and 53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20, 26-31, 33-34, 36-38, 41-45, 52, 54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This action is in response to the amendment filed on 6 August 2003 in which claims 1-20, 26-31, 33-34, 36-38, 41-45, 52, and 54 are pending. Claims 32, 46-51, and 53 were cancelled.

#### ***Claim Objections***

1. Claims 41, 42, 43, 44, 45 are objected to because of the following informalities: they incorrectly depend from cancelled claim 32. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 2-3, 5-9, 12-20, and 54 are rejected under 35 U.S.C. 103(a) over Boyden (U.S. Patent No. 5,815,579).

Regarding claim 1, Boyden teaches a wearable speaker system comprising: a garment including a first duct (14, 24; 56, 58; 76; 84, 92; 102, 104; 306) having lengthwise, widthwise, and heightwise dimensions which are perpendicular to each other (figs. 1-15) defining a chamber, and at least one sound transducer (10, 12; 72, 74; 82, 90; 106, 108; 302, 304) mounted in the duct. Boyden does not specifically teach the widthwise dimension to the heightwise dimension ratio is not more than three to one;

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however, Boyden does allow the dimensions of the speaker system to be varied (figs. 1-15). Since the Boyden references allows the dimensions of the speaker system to be varied and it is known to construct speaker systems of any suitable dimensional ratio, such as three to one, for obtaining a desirable placement of the system and the promotion of comfort and fit to the user, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the garment of Boyden with a widthwise to heightwise ratio of not more than 3 for the reasons stated above.

Regarding claim 2, Boyden discloses the first duct is adapted to flex without pinching off the first duct chamber (Boyden, fig. 2; col. 5 lines 24-34; col. 13, lines 61-63).

Regarding claim 3, Boyden does not teach the first duct having a substantially round cross-section, but the combination does teach adding filler (Boyden, acoustic transparent material). The examiner takes official notice that it is known in the art to include enough filler, such that a round cross-section is produced, for insulation purposes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a round cross-section by including filler in the invention of the combination for insulation purposes.

Regarding claim 5, Boyden discloses the second transducer faces outward toward an ear of the wearer (see figures).

Regarding claim 6, Boyden discloses the garment is one of a jacket, vest, and a shirt. (Boyden, col. 2 lines 55-61).

Regarding claim 7, Boyden discloses a second duct (14, 24; 56, 58; 76; 84, 92; 102, 104; 306) having first and second ends defining a second duct; and a least one

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second sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304) mounted to the second duct.

Regarding claim 8, Boyden discloses the second duct is adapted to flex without pinching off the second duct chamber (Boyden, fig. 2; col. 5 lines 24-34; col. 13, lines 61-63).

Regarding claim 9, Boyden does not teach the second duct having a substantially round cross-section, but the combination does teach adding filler (Boyden, acoustic transparent material). The examiner takes official notice that it is known in the art to include enough filler, such that a round cross-section is produced, for insulation purposes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a round cross-section by including filler in the invention of the combination for insulation purposes.

obj Regarding claim 12, Boyden does not specifically teach the first duct having an area substantially smaller than a cross-section through the second duct, but Boyden does allow filler to be added (acoustic transparent filler). The examiner takes official notice that it is known in the art to include varying amounts of filler, such that different cross-sections are produced, for changing the damping of one enclosed speaker relative to the other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have different cross sections produced for the first duct relative to the second duct in the invention of the combination for changing the damping attenuation of one enclosed speaker relative to the other.

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Regarding claim 13, Boyden discloses the garment has a collar and one of the first and second duct is attached to the collar of the garment (Boyden's lapel, col. 5 lines 41-44).

*obj* Regarding claim 14, Boyden does not specifically use a covering over the second duct. However, the examiner takes official notice that it is known in the art to including coverings to protect the transducer from debris and moisture. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a covering over the second duct of the invention of Boyden for the reasons stated above.

*obj* Regarding claim 15, Boyden does not teach a first securing ring is coupled to the cover adjacent the first end and a second securing ring is coupled to the cover adjacent the second end, the first and second rings each being detachably coupled to the garment and at least partially securing the second duct to the garment. However, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was to include first and second securing rings at the first and second duct respectively, for reinforcing the location where a component would be attached to prevent tearing of the garment. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include first and second securing rings in the invention of the combination for reinforcement.

Regarding claim 16, Boyden discloses the second duct defines at least one port (Boyden's vent, col. 2 lines 43-54).

Regarding claim 17, Boyden does not teach a first securing ring is coupled to the first duct adjacent the first end and a second securing ring is coupled to the second duct

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adjacent the second end, the first and second rings each being detachably coupled to the garment and at least partially securing the second duct to the garment. However, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was to include first and second securing rings at the first and second duct respectively, for reinforcing the location where a component would be attached to prevent tearing of the garment. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include first and second securing rings in the invention of the combination for reinforcement.

Regarding claim 18, Boyden discloses the speaker system comprising: an audio player (Boyden, col. 2 lines 64-67); and a transducer wire coupled to each of the sound transducers (Boyden, col. 8 lines 21-27).

Regarding claim 19, Boyden discloses the audio player positioned in a pocket of the garment (Boyden, col. 2 lines 64-67; col. 8 lines 21-26; col. 14 lines 3-9).

Regarding claim 20, Boyden discloses the second duct crosses one of the shoulders of the garment (Boyden, figures 6-8).

Regarding claim 54, as shown in figures 1 and 5-16, Boyden discloses a modular personal wearable speaker system attachable to a garment and for use with a portable player, comprising: a plurality of ducts (14, 24; 56, 58; 76; 84, 92; 102, 104; 306) having a first end and a second end and defining a chamber there between; a plurality of sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304), the ducts each defining an opening into the chamber (fig. 1, shows the chamber), the opening adapted to receive at least one of the sound transducers, wherein the ducts (fig. 1, 5-16, ducts in multiple configurations) are adapted to be interchangeably coupled to the garment, the transducers

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are adapted to be interchangeably coupled to the ducts (figs. 5-16, multiple speaker configurations; one or more transducers, col. 7 lines 21-29).

3. Claims 4, 10-11, 26-31, 33-34, 36-38, 41-45 are rejected under 35 U.S.C. 103(a) over Boyden (U.S. Patent No. 5,815,579), in view of Liautaud (U.S. Patent No. 4,322,585).

Regarding claim 4, Boyden teaches the at least first sound transducer comprising a first pair of sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304). Boyden does not teach facing the pair of sound transducers inward toward the body. Liautaud teaches facing the pair of sound transducers facing inward toward the body of the wearer for promoting mechanical sound transmissions (col. 3, lines 6-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the first pair of transducers inward in the invention of Boyden, as taught by Liautaud, for promoting mechanical sound radiation.

Regarding claim 10, Boyden teaches the at least second sound transducer comprising a second pair of sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304). Boyden does not teach facing the pair of sound transducers inward toward the body. Liautaud teaches facing the pair of sound transducers facing inward toward the body of the wearer for promoting mechanical sound transmissions (col. 3, lines 6-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position at least one of the first or second pair of transducers inward in the invention of Boyden, as taught by Liautaud, for promoting mechanical sound radiation.



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Regarding claim 11, Boyden teaches the at least second sound transducer comprising a second pair of sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304). Boyden does not teach facing the pair of sound transducers inward toward the body. Liautaud teaches facing the pair of sound transducers facing inward toward the body of the wearer for promoting mechanical sound transmissions (col. 3, lines 6-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position both of the first or second pair of transducers inward in the invention of Boyden, as taught by Liautaud, for promoting mechanical sound radiation.

Regarding claim 26, Boyden discloses a wearable speaker system comprising: a garment (col. 2 lines 55-61) including at least a first duct (14, 24; 56, 58; 76; 84, 92; 102, 104; 306) having a first end and a second end and a chamber; first and second sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304) mounted to the first and second ends of the duct respectively; a second duct (14, 24; 56, 58; 76; 84, 92; 102, 104; 306) having first and second ends and a chamber attached to the garment; and a third and fourth sound transducers (10, 12; 72, 74; 82, 90; 106, 108; 302, 304) mounted to the first and second ends of the duct respectively. Boyden also teaches in several instances (figs. 6-8) having the wearable speaker system located at the torso of a body of the wearer. Boyden does not teach facing the transducer inward toward the body. Liautaud teaches mounting a wearable speaker system such that the transducers are pressed against a portion of the body, thereby, allowing bone conduction which advantageously creates excellent stereo separation (col. 3 lines 4-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the

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transducers facing inward in the invention of Boyden, as taught by Liautaud, for the reason stated above.

Regarding claim 27, the combination of Boyden and Liautaud discloses the first duct is adapted to flex without pinching off the first duct chamber (Boyden, fig. 2; col. 5 lines 24-34; col. 13, lines 61-63).

Regarding claim 28, the combination of Boyden and Liautaud does not teach the first duct having a substantially round cross-section, but the combination does teach adding filler (Boyden, acoustic transparent material). The examiner takes official notice that it is known in the art to include enough filler, such that a round cross-section is produced, for insulation purposes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a round cross-section by including filler in the invention of the combination for insulation purposes.

Regarding claim 29, Boyden does not teach facing the pair of sound transducer inward toward the body. Liautaud teaches facing a sound transducer inward toward the body of the wearer for promoting mechanical sound transmissions (col. 3, lines 6-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the second transducer inward in the invention of Boyden, as taught by Liautaud, for promoting mechanical sound radiation.

Regarding claim 30, the combination of Boyden and Liautaud discloses the first transducer faces outward toward an ear of the wearer (Boyden, see figures).

Regarding claim 31, the combination of Boyden and Liautaud discloses the garment is one of a jacket, vest, and a shirt. (Boyden, col. 2 lines 55-61).

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Regarding claim 33, the combination of Boyden and Liautaud discloses the second duct is adapted to flex without pinching off the second duct chamber (Boyden, fig. 2; col. 5 lines 24-34; col. 13, lines 61-63).

Regarding claim 34, the combination of Boyden and Liautaud does not teach the second duct having a substantially round cross-section, but the combination does teach adding filler (acoustic transparent material). The examiner takes official notice that it is known in the art to include enough filler, such that a round cross-section is produced, for insulation purposes. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a round cross-section by including filler in the invention of the combination for insulation purposes.

Regarding claim 36, the combination of Boyden and Liautaud does not specifically teach or restrict the second and fourth transducers from facing inward toward a body of the wearer. However, the examiner takes official notice that it is known in the art to vary the angular placement of the transducer for altering the radiation of sound; thereby, advantageously controlling sound radiation (fig. 5; col. 5 lines 9-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to position the first pair of transducers inward in the invention of Boyden, as taught by Liautaud, for controlling the radiation of sound.

Regarding claim 37, the combination of Boyden and Liautaud does not teach the first duct having an area substantially smaller than a cross-section through the second duct, but Boyden does teach adding filler (acoustic transparent filler). The examiner takes official notice that it is known in the art to include varying amounts of filler, such that different cross-sections are produced, for changing the damping of one enclosed

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speaker relative to the other. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have different cross sections produced for the first duct relative to the second duct in the invention of the combination for changing the damping attenuation of one enclosed speaker relative to the other.

Regarding claim 38, the combination of Boyden and Liautaud discloses the garment has a collar and one of the first and second duct is attached to the collar of the garment (Boyden's lapel, col. 5 lines 41-44).

Regarding claim 41, the combination of Boyden and Liautaud discloses the second duct defines at least one port (Boyden's vent, col. 2 lines 43-54).

Regarding claim 42, the combination of Boyden and Liautaud does not teach a first securing ring is coupled to the first duct adjacent the first end and a second securing ring is coupled to the second duct adjacent the second end, the first and second rings each being detachably coupled to the garment and at least partially securing the second duct to the garment. However, the examiner takes official notice that it would have been obvious to one of ordinary skill in the art at the time the invention was to include first and second securing rings at the first and second duct respectively, for reinforcing the location where a component would be attached to prevent tearing of the garment. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include first and second securing rings in the invention of the combination for reinforcement.

Regarding claim 43, the combination of Boyden and Liautaud discloses the speaker system comprising: an audio player (Boyden, col. 2 lines 64-67); and a transducer wire coupled to each of the sound transducers (Boyden, col. 8 lines 21-27).

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Regarding claim 44, the combination of Boyden and Liautaud discloses the audio player positioned in a pocket of the garment (Boyden, col. 2 lines 64-67; col. 8 lines 21-26; col. 14 lines 3-9).

Regarding claim 45, the combination of Boyden and Liautaud discloses the second duct crosses one of the shoulders of the garment (Boyden, figures 6-8).

4. Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boyden (U.S. Patent No. 5,815,579), in view of Leonard et al (U.S. Patent No. 4,603,327).

Regarding claim 52, Boyden teaches a garment having a duct (10, 24; 56, 58; 76; 84, 92; 102, 104; 306) defining a duct chamber, at least one sound transducer (10, 12; 72, 74; 82, 90; 106, 108; 302, 304) mounted in the duct electrically connected to the player (col. 2 lines 64-67 and col. 8 lines 21-27). Boyden does not limit the connection to any specific type of electrical connection. In a similar field of endeavor, Leonard et al teaches an electrical connection in which first and second zipper portions are used to engage or disengage an electrical circuit path thus functioning as a circuit breaker in a garment. Therefore, it would have been obvious to one of ordinary skill in the art to use first and second zipper portions of Boyden, as taught by Leonard, for providing the electrical connection for transmission of the audio signal and eliminating the need for a separate wiring scheme.

### ***Response to Arguments***

With respect to the traversal of claims 1, 3, 6-20, 28-29, 34-37, 42, in which references Waldron and Hass were used singularly or in combination, the rejection have

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been replaced with Boyden in combination with Liautaud or Leonard above for the purpose of simplifier prosecution.

With respect to the traverse of claims 26, 27, 30-33, 38, 41, 43-45, and 54, with reference to the newly added limitations "...transducers facing inward toward the torso." The examiner has presented a new rejection above using Boyden in combination with Liautaud (col. 3 lines 4-22).

With respect to the traversal of claim 52, as noted by the Applicant's representative, the Boyden reference teaches using "...wires or other conventional electrical connection devices." Leonard (patented 1986) teaches a known means of providing an electrical connection utilizing a zipper. Therefore, the rejection is maintained.

With respect to the traversal of claim 54, in which the applicant states that Boyden does not teach, "transducers...adapted to be interchangeably coupled to the garment", the examiner disagrees with this statement. Boyden allows different speaker configurations to be used in the ducts of the different embodiment. For instance, Boyden, in column 7 lines 14-20 and column 8 lines 6-11, states that there may be a need to include low-frequency transducers with high frequency transducers, or simply to use other transducer arrangements to meet dipole and mutual coupling requirements.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phylesha L Dabney whose telephone number is 703-306-

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5415. The examiner can normally be reached on Mondays, Tuesdays, Wednesdays, Fridays 8:30-5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**Or faxed to:**


(703) 872-9314, for formal communications intended for entry and for informal or draft communications, please label "Proposed" or "Draft" when submitting an informal amendment.

(703) 306-0377, for customer service questions.

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

PLD

  
November 2, 2003

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600